POLITÉCNICO DE LEIRIA

Computer Graphics

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Project development

Our strategy for this project was to use the base that we had from class to do the 2D rendering of the sprite animations. We created a Texture class that is responsible for image loading, and from then, we worked on the animation system, where the program goes through the spritesheets of the characters and picks them accordingly to be displayed in the scene. To work with multiple objects, we tried multiple options, such as handling the texture files with a single array, binding them in the render loop with another loop, and doing them individually.

Animation

For the animation of each sprite sheet, we created a function that would divide a singular sheet into whatever many sprites existed in said sheet. We can insert how many sprites per row and column on the function. Then, in the while function, the method will run through each divided part of the sheet and run through it at 12 frames per second, effectively animating the object in the sheet.

Multiple Object Rendering

For rendering multiple objects at once, we tried multiple solutions. As stated before, the solution we settled for was taking care of each object individually. We thought about making specific methods on an external class to help with this, but due to time constraints, we decided that it would be best if we had working code that could be duplicated any time we wanted a new object.

For an object to be displayed in the scene, you need 4 new vertices per object, which represent the corners of the sprite. After defining these vertices, you then need to load the desired texture and define a new variable that will store it. We chose the sprite names for simplicity's sake. After this, in the render loop, we bind each texture to their respective set of 4 vertices and draw them.

Sources

Class documentation and project bases provided by the teacher.

Copilot aid for syntax related problems and general bug fixing.